ISSUE DATE: July 21, 2000

DOCKET NO. E-002/CN-99-1815

ORDER GRANTING CERTIFICATE OF NEED

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Gregory Scott	Chair
Edward A. Garvey	Commissioner
Joel Jacobs	Commissioner
Marshall Johnson	Commissioner
LeRoy Koppendrayer	Commissioner

In the Matter of the Application of Northern States Power Company for a Certificate of Need to Increase the Capacity of Black Dog Station Units 1 and 2

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PROCEDURAL HISTORY

I. Initial Proceedings

On December 30, 1999, Northern States Power Company (NSP) filed a certificate of need application for permission to increase the generating capability of its Black Dog Power Plant. NSP plans to install gas-fired generating technology in place of the existing coal-fired generating technology in Black Dog units 1 and 2. The proposed project is a "large energy facility" as defined in Minn. Stat. § 216B.2421, subd.2(a).

On January 4, 2000, the Commission issued a revised notice requesting comment on the completeness of NSP's application. The initial and reply comment deadlines given in that notice were January 17, 2000 and January 24, 2000, respectively.

On January 14, 2000, NSP filed additions and revisions to its certificate of need application.

On January 18, 2000, the Department of Commerce (DOC) filed comments on the completeness of the NSP application. On January 24, 2000, NSP replied to those comments.

On February 3, 2000, the Commission issued its ORDER EXTENDING COMPLETENESS REVIEW PERIOD. In that Order the Commission varied Minn. Rules, part 7849.0200, subp. 5 to extend the period for Commission action on the completeness of the application.

On January 31, 2000, NSP filed certain revisions to its application.

On February 24, 2000, the Commission issued its ORDER ACCEPTING FILING, DELEGATING PREPARATION OF ENVIRONMENTAL REPORT AND SETTING FEE and its NOTICE AND ORDER FOR HEARING. The Commission referred the matter to the Office of Administrative Hearings, which assigned Administrative Law Judge (ALJ) Steve M. Mihalchick to conduct contested case proceedings.

II. Parties and Representatives

NSP was represented in the proceedings before the Administrative Law Judge by Michael Connelly, Attorney**,** 414 Nicollet Mall, Minneapolis, Minnesota 55401.

The DOC was represented by Julia E. Anderson, Assistant Attorney General, 525 Park Street, Suite 500, St. Paul, Minnesota 55103.

The DOC was the only intervening party to file testimony.

III. Public and Evidentiary Hearings

On April 27, 2000, at 6:30 P.M., a public hearing was held at Burnsville High School. On May 8, 2000 an evidentiary hearing was held in St. Paul. No members of the public appeared to testify at either proceeding. NSP and the DOC entered testimony and documents into the record at the May 8, 2000 hearing.

On May 25, 2000, NSP submitted Proposed Findings of Fact, Conclusions of Law and Recommendations. On June 1, 2000, the DOC indicated its support for NSP's proposed findings.

On June 7, 2000, Administrative Law Judge Steve M. Mihalchick issued his Findings of Fact, Conclusions of Law and Recommendation (ALJ's Report). ALJ Mihalchick recommended that the Certificate of Need be issued without condition.

IV. The Environmental Report

On April 10, 2000, a draft environmental report was issued by the DOC. On May 12, 2000, the DOC issued its Final Environmental Report. No comments of substance were received from the public or the state agencies during the comment period.

V. Proceedings before the Commission

On June 28, 2000, the matter came before the Commission.

FINDINGS AND CONCLUSIONS

I. Factual Background

NSP is an investor-owned Minnesota corporation. NSP is a vertically integrated electric and natural gas utility. NSP owns electric generation, electric transmission, electric distribution, and natural gas distribution assets.

NSP proposes installing gas-fired combined cycle electric generating technology in place of the existing coal-fired generating technology in Black Dog Units 1 and 2. The Black Dog Electric Generating Plant is located in Dakota County. It consists of four coal-fired steam generation units with a total generating capability of 485 megawatts (MW).

The project will include the removal of the Black Dog Unit 1 coal-fired boiler, precipitators, steam turbine and generator and the decommissioning of the Unit 2 coal-fired boiler. A new natural gas-fired combustion turbine-generator set will be placed on the Unit 1 steam turbine and generator foundation and a new heat recovery steam generator (HRSG) will be placed in the Unit 1 boiler cavity. The Unit 2 steam turbine and generator will be utilized in the combined cycle. The HRSG will have the ability to be fired with supplementary natural gas to provide additional peaking capacity.

The project's nominal generating capacity is 290 MW, which is the net capacity during summer conditions when the combustion turbine is operated at full load and the HRSG is duct-fired with supplementary natural gas to obtain peak output. The maximum project output of 323 MW occurs when operating in the winter when the combustion turbine is operated at full load and the HRSG is supplementary duct-fired to obtain peak output. The project will increase the generating capacity of Units 1 and 2 by a nominal 114 MW during summer operations.

The project will operate using the combustion turbine without duct firing between 80 and 90 percent of its operating hours. Operating in that mode at yearly average temperature conditions(45°F and 60% relative humidity), the project will have a capacity of 260 MW. The project operates at maximum efficiency (over 47%) without duct firing.

The project will be fueled entirely by natural gas with no backup fuel. NSP will secure firm natural gas supply contracts to comply with Mid-Continent Area Power Pool certification requirements. In combustion turbine peak firing mode and with HRSG duct firing during summer conditions the project will consume 2.2 million standard cubic feet of natural gas per hour. Under the expected annual operating conditions-dispatched 5 days per week, 16 hours per day-the project could consume up to 9,200 million standard cubic feet of natural gas per year.

The project components will be located primarily within the existing plant. New components that will be located outside of the plant are the combustion turbine step-up transformer, the HRSG exhaust stack and the air inlet filter. The exhaust stack will be approximately 230 feet tall and will be located in the footprint of the existing 292-foot Unit 1 retired flue gas chimney. The existing building height will be modified. The roof will be raised from about 67 feet to a height of 125 feet, consistent with the current elevation of the adjacent boiler area roof. A gas compressor building approximately 20 feet by 40 feet will be added.

No new transmission lines will be necessary; however, reconditioning of two 115 kV lines between Black Dog Substation and Wilson Substation, located 4 ½ miles north of the plant, will be necessary. Reconditioning consists of replacing the conducting cables currently on the line with new cables capable of higher current.

II. Certificate of Need Criteria; ALJ's Findings

The criteria for granting a certificate of need are set forth in Minn. Stat. § 216B.243 and Minn. Rules, parts 7849.0010 through 7849.0400.

Minn. Rule 7849.0120 sets forth four criteria which must be met in order to establish need for the proposed generating facility. Each of these criteria and some of the ALJ's findings concerning them will be discussed below.

A. The probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states.

In its 1998 Resource Plan proceeding NSP prepared a long-range forecast of energy sales, native energy requirements, and peak demand for the period of 1998-2013. That forecast estimated 1.7 percent average annual growth in native energy and peak demand requirements. In an updated forecast for the years 1999 to 2020, system peak demand was predicted to have a median growth rate of 1.6 percent.

The ALJ found that the forecasts presented were prepared in a reasonable manner, were reasonably reliable and are appropriately used to determine the need for the project. Based on the forecasts the ALJ found that there is a need for the project.

In 1998 NSP conserved approximately 258,683 MWh of energy savings and 114 MW of demand savings through new and existing energy-efficiency and energy-conservation projects. NSP's current goal is to achieve 2,468 GWh of energy savings and 896 MW of demand savings between 1998 and 2012. The need for the project would be much greater without the savings achieved through conservation and load management efforts.

NSP predicts a deficit between its forecast of peak demand and its committed resources of nearly 300 MW in 2002. NSP may be able to purchase additional capacity and energy on the short-term market; however, relying on short-term power purchases presents a risk of much higher costs to NSP customers.

The ALJ found that current and planned facilities, including purchased power, not requiring certificates of need, are not adequate to meet projected needs.

The ALJ further noted that the project will make efficient use of resources to generate electricity. The project is expected to operate at an efficiency of 44 to 47 percent. That compares to a 30 percent operating efficiency of the current facility.

B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record.

- Renewable Alternatives to the Proposed Project

The ALJ found that NSP demonstrated that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the project is less expensive (including environmental costs) than power generated by a renewable energy source.

NSP evaluated hydro, wind, solar and biomass renewable alternatives and addressed the viability of geothermal energy.

There are no utility-scale geothermal sites in Minnesota or the MAPP region, therefore, geothermal fails as an alternative to the project.

Hydropower cannot meet the project's availability, timing, and cost-effectiveness objectives. Undeveloped hydro sites in Minnesota and neighboring states are limited and small. Over 100 megawatts of hydropower could not be developed cost effectively nor could it be placed in service by the 2002 time frame. While substantial hydro capacity exists in Manitoba it cannot be developed by the 2002 time frame and would require substantial transmission additions to implement.

Neither a solar alternative nor a biomass alternative will meet the project's cost-effectiveness objectives. The technical viability of large-scale solar power has not been proven in the upper Midwest and a biomass facility would be unlikely to be in service by 2002.

Wind power would not meet the project's availability criteria. This project will provide 114 MW of accredited capacity in the summer. NSP would need to seek approximately 844 MW of nameplate wind to obtain114 MW of accredited summer wind capacity. It is unlikely that this amount of nameplate capacity could be placed in service by 2002. Further wind is not a dispatchable resource because of the intermittent nature of wind availability and therefore cannot be used to follow instantaneous changes in electricity demand as this project will.

- Other Alternatives

A dual combustion turbine facility could be built in a short time frame. However, dual combustion turbine units are typically operated at peaking rather than intermediate capacity factors. For this reason, the dual combustion turbine facility would not meet the established criteria for this project.

Purchased power may be available in the MAPP region on the wholesale market. Such purchases, however, would be subject to varying economic conditions.

New coal fired units would require over three years to build and normally operate at capacity factors well above either peaking or intermediate units. However, a refurbished coal-fired facility could upgrade the existing Black Dog Units 1 and 2 for intermediate service with additional capacity purchased on the wholesale market. This could meet the project's criteria, but a refurbished coal fired facility would have greater air emissions of sulfur dioxide, nitrogen oxides, particulates, carbon dioxide and carbon monoxide than the proposed project.

C. By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the human and socioeconomic environments, including human health.

The project reduces the risk of extremely high costs for power supply during periods of high demand.

Absent the project, Black Dog Units 1 and 2 would continue to operate using coal as fuel. Without the project, fuel consumption and air emissions associated with the production of electricity would be greater.

Annual property taxes from the Black Dog Power Plant to all taxing jurisdictions after the project is implemented are estimated to be approximately $3.5 million, a reduction for the estimated year 2000 property tax level of $4.2 million. Gross sales tax revenue in Minnesota from construction materials and services will be about $3.9 million. The project will create up to 205 construction jobs and an additional 15 full-time operating positions at the plant.

The ALJ concluded that considering the size, type, timing, cost, natural and socioeconomic environmental effects, and reliability, a more reasonable and prudent alternative to the project has not been demonstrated by a preponderance of the evidence on the record.

D. The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

Further, the ALJ concluded that the record does not demonstrate that the design, construction, or operation of the project will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

The ALJ concluded that the requirements of a Certificate of Need as set forth in Minn. Stat. § 216B.243 and Minn. Rules, part 7849 have been satisfied.

III. Commission Analysis

The certificate of need proceeding was conducted in compliance with relevant Minnesota statutes and rules.

The public had an opportunity to participate in public hearings conducted by the ALJ in Burnsville, Minnesota and St. Paul, Minnesota. No member of the public chose to speak at either of the two hearings.

NSP submitted Proposed Findings of Fact, Conclusions of Law and Recommendation. The DOC submitted a letter reflecting its agreement with NSP's findings, conclusions and recommendations.

After conducting the public and evidentiary hearings and after examining all testimony and comments the ALJ adopted findings and conclusions which were like in form and substance to the parties' proposed version. The ALJ found that the application substantially conforms to the requirements of the applicable statutes and rules, as interpreted by the Commission, and recommended that the Commission grant the requested Certificate of Need.

Having examined the full record, the Commission agrees with the ALJ that a Certificate of Need for the project proposed by NSP is reasonable and appropriate. The Commission adopts the ALJ's Findings of Fact, Conclusions of Law and Recommendation. The Commission will grant NSP the Certificate of Need, as requested.

ORDER

1. The Commission grants NSP a certificate of Need for construction of the large electric generating facility proposed by NSP.

1. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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